James River bacterial TMDL Implementation Plan First Government/Urban Second Working Group Meeting Summary

Piedmont Regional Office, DEQ
4949A Cox Rd, Glen Allen, VA 23060
Thursday, December 9, 2010, 10:00 AM - 12:30 PM

1. Attending:

Margaret Smigo DEQ TMDL coordinator
John Woodburn Henrico DPU
Jeff Perry, Henrico DPW
Kenneth W. Smith, RCHD
Bill Mawyer, Asst. Director, Henrico DPU
Roy T. Mills, VDOT
Keith Burgess, Monocan SWCD
Mike Callahan, Henrico HD
Megan Sommers Bascone, DCR/VCR
Chris Swanson, EEE for VDOT
Ed Cronin, Greely & Hansen, for City of Richmond
Grace LeRose, City of Richmond
Lin Liang, Greely & Hansen, for City of Richmond
Chris French, ACB
Rick Thomas, Timmons Group
Mark Alling, DEQ Piedmont office
Lorne Field, Chesterfield Environmental Eng.
Scott Flanigan, Chesterfield EE
Craig Lott, DEQ Facilitator

2. Craig Lott provided an overview of the Government/Urban Working Group (GUWG) Responsibilities:

- Review the pollutant reductions that the implementation plan must meet.
- Discuss preliminary estimates of implementation measures that will result in reductions in urban loads.
- Document existing efforts underway to address bacteria in urban areas of the James River watershed.
- Identify additional measures needed to reduce the bacteria load that the implementation plan can address.

Lott handed out meeting Agenda to members.

Members discussed the first two agenda items at this meeting.

3. Ms. Smigo introduced stenciling storm drains as a BMP option. Burgess stenciled in Powhatan Co. with Board of Supervisors OK. In Henrico, stenciling encouraged but there are concerns on maintenance and it is done more in residential areas. There is an ordinance that no one may dump into sewer system. VDOT has a message built into the

storm drain covers. Henrico also has message discs on storm drains. With 250 markers the cost goes down per marker.

4. Mr. Lott offered a draft Lynchburg IP. MapTech is not present today but will attend all the steering committee meetings. Mr. Lott offered a list of needs to the group and reminded the group to list BMPs since Sept. 30, 2003. Henrico stated they had not been contacted by MapTech for data needs. Henrico will provide contact info for their GIS person and Maptech will contact that person.

5. Open discussion on the pollutant reductions that the implementation plan must meet. The group reviewed pollutant reductions in Table 1 of today's handout. Ms. LeRose asked if MapTech was to do new reductions for Reedy Creek. Yes, as a new scenario. Another member asked if MapTech was to do new reductions for James River after upstream delisting. Yes, as a new scenario. These will be available before the first Steering committee meeting in January. Mr. Cronin explained the James scenario was needed because the upstream James segment was delisted after modeling and CoR wants to see if reductions change with upstream load reduced to the water quality standard.

Mr. Burgess stated that Bernards livestock numbers are incorrect and he had notified MapTech, however the original numbers stayed in the report. The Livestock numbers are too high, there has not been a dairy in the watershed in 30 yrs. There is only one livestock operation in the watershed, and it is downstream of the Rt. 711 monitoring station, but there are a number of horses. Mr. Lott asked for written data update. Mr. Burgess stated that current data is needed. Mr. Alling said he would check and supply current data, and add Bernards Creek at Rt. 711 to next two year ambient network in January 2011.

Mr. French mentioned that Tuckahoe Creek has a TMDL but no IP, and is in this James watershed. DEQ to check if included or can be added to this IP. Mr. Perry asked if Tuckahoe drained to an unimpaired segment. Yes. Mr. Lott asked for additional thoughts on Tuckahoe Creek and volunteered to check.

Henrico stated there are no livestock in Almond Creek, except possibly horses. The same question was asked of Chesterfield Co. and City of Richmond for Powhite Creek. Just because there is a # reduction for livestock does not necessarily mean livestock abide in the watershed. There could have been manure applied or livestock transported through watershed. There were several more comments on the accuracy of livestock populations numbers. Mr. Alling said that the group would simply not add cattle fencing as a BMP if there were no cattle in a watershed.

The No Name Creek subdivision was taken off septic systems and added to municipal sewerage three years ago. Comment was made that Falling Creek human and pet land based % reduction was low while the creek drained a large portion of Chesterfield County. DEQ requested current information for changes in No Name and Falling Creeks.

The baseline date for BMP information is 9/30/2003.

Mr. Perry asked for current BST data, and DEQ responded no longer sampling BST because of cost at $250 per sample X 12 samples per station. DEQ said localities could do BST if they desired, doing 12 monthly samples per station, or data could be spread out over 2 years bimonthly. He then asked how we evaluate improvement. DEQ explained improvement judged by E. coli sample result in at least the original listing stations down to water quality standard.

Mr. Cronin asked for all E. coli data from all stations since 2003 to be emailed to all members. DEQ agreed to make available electronically or to email the large spreadsheet. DEQ is not familiar with monitoring that localities may be doing, unless its submitted for assessment. Mr. French said that the ACB is currently partnering with the Reedy Cr Alliance to sample that watershed.

Mr. Thomas asked for an explanation of column headings in Table 1. Ms. Smigo explained.

Open discussion on the preliminary estimates of implementation measures that will result in reductions in urban loads. Mr. Lott asked group for contact information for member's GIS staff. He stated that EPA provides lists of BMPs online for FAQ and other question responses on efficiencies, costs, etc. He mentioned maintenance resource needs as an additional consideration in planning and budgeting. The comment was made that only the City has CSOs, none in counties. SW BMPs will only be needed to address these waters which required further reductions to meet the water quality standards (Gillie Ck, Almond Ck, etc).

Mr. Fritz stated there is a difference between stormwater volume control and volume reduction and types of BMPs for reduction of MS4/CSO flows, i.e. that some BMPs may reduce only flow, not bacteria numbers. Bacteria and LID don't match up; some BMPs may concentrate wildlife loads, so must carefully choose BMPs. Mr. Lott said that retention ponds can reduce bacteria, while detention ponds may increase bacteria loads from differences in turn-over, but that many sedimentation BMPs do reduce bacteria loads.

Mr. Perry asked for DEQ guidance on most efficient BMPs, that Table 2 does not convey efficiencies. Mr. Lott and Mr. Cronin said the International Stormwater BMP Database (www.bmpdatabase.org) provides efficiency data, though data are expressed in ranges of varying widths. One site in Charlottesville had only 3 datapoints. Mr. Lott said it is hard to justify benefits of non-mandatory BMPs but well-chosen prudent BMPs designed to reduce bacteria will be a benefit. BMPs efficiencies are dependent upon many variables, including hydrology, infiltration, sedimentation, filtration, exposure to sunlight, habitat for fecal bacterial predators, etc. USEPA, other United States agencies, and other countries contribute to the peer reviewed International BMP Database. It may be found online at the following address: http://www.bmpdatabase.org/BMPPerformance.htm

Note (The most recent addition to the database): ***December, 2010 Bacteria Technical Paper and Spreadsheets***

- *Regulatory context for pathogens in receiving waters*
- *Sources of pathogens and fecal indicator bacteria*
- *Fate and transport processes, removal mechanisms and associated BMP design considerations for fecal indicator bacteria and pathogens*
- *Overview and analysis of fecal indicator bacteria included in the International Stormwater BMP Database (BMP Database)*
- *Conclusions and recommendations*
- *Open Excel spreadsheet of data set used in analysis*

Mr. Flanigan said that Chesterfield BMPs will be solid infrastructure rather than smaller 'green' infrastructure items. Mr. Lott said that Virginia Beach started grant applications during the Lynnhaven IP, including an aggressive "Find and Fix It' program for sewer lines. This was thought to be the most effective BMP used there. One shellfish growing area which had been impaired and restricted for over 75 continuous years was opened for shellfishing during this IP development and implementation.

The question was asked whether localities without CSOs would get credit for stormwater reductions. Yes, to the extent that they address their bacteria reductions.

Mr. Perry asked if localities will ever get efficiencies for bacteria BMPs? Mr. Fritz stated variability is great on BMP efficiencies, but that municipal sewer systems are already doing BMPs without realizing it, for example by requiring high standards, extending sewer lines, using most current technologies, and TVing lines.

Mr. Lott said that if members have questions on loadings from the TMDL, please contact DEQ.

Ms. LeRose commented that the most effective BMP would be to remove all septic systems and replace with sewer line connections. Several responded that distance and feasibility are determining factors. Ms. LeRose said we cannot do anything about livestock and pets, so find money to take septic systems offline.

Mr. Perry asked if no one can say what effect 1400 BMPs including wet ponds and detention ponds costing millions of dollars that Henrico has installed have on water quality, how do localities know what's effective? What should they install now?

Mr. French replied there is no easy answer. The only way to answer is by looking at locally collected water monitoring data. He said a JRA study in the tidal James area showed a 40-50% BMP failure rate simply because the BMPs were not installed correctly and/or maintained properly. Mr. Fritz stated there are "general effectiveness" data, not exact but more of a range, such as a list from EPA with design info included. He also said Knoxville has a BMP manual/database with a list and general effectiveness for

bacteria, which could be used to set locality priorities for BMPs. Mr. Lott asked for members to supply any efficiency study data they find. (Craig will get link from Doug F.) (seems like Grace L. had a study from Oregon).

Mr. Mawyer stated that the planning commission approves whether septic fields will be used in new subdivisions. Henrico says that if the distance to a sewer connection is more than 300 ft then septic fields are approved. At less than 300 ft you must connect. He stated there is an alternative to build the sewer line connector up front and recoup costs when subdivision hook up but the problem there is who fronts the initial costs. Ms. LeRose stated that if ponds are put everywhere, there are continuing maintenance costs that add up too.

Mr. Perry asked how effective septic pumpouts would be, what is the cost benefit for these and other actions. Quantifying benefits of BMPs are important for citizens. Ms. Bascone added that Lynchburg study found it was cheaper longterm to hook up to municipal sewer, but selling that to public is hard. Lynchburg was looking at $20000 to hookup to city sewer and installing septic system costs about the same. Lynchburg urges septic tank owners to pump out each 5 years to extend the life and cost of their septic systems.

Mr. Lott said the Ches. Bay VA WIP states that some treatment systems may not be allowed in the future.

Mr. Flanigan stated that where 30 to 50 year old septic systems were installed where now there is considered not enough land to expand them, some owners install straight pipes to a creek through the old drainfield.

Mr. Cronin stated it costs about $25000 for a new installed septic system, which is a hard sell to homeowners.

Mr. Perry said group will not be able to quantify efficiencies of BMPs. Mr. Lott stated that if localities provide GIS layers with BMPs as asked, the efficiencies are provided in literature that will show costs and predicted reductions. Mr. Fritz stated that localities will have to provide BMPs to remove the excess bacteria loads in TMDLs.

Mr. Lott asked for any corrections to Table 1 on page 6 – Estimated residential BMPs needed.. Mr. Perry questioned data saying Almond Creek needed 148 septic pump outs but only 35 failed. DEQ will asked MaPTech to explain the numbers in Table 1. Table 4 Residential will be addressed in the Residential wg meeting. Ms. Bascone explained pet waste composters to the group. Mr. Perry asked why there were no pet waste composters required for Falling Creek, and Mr. Lott explained that there was a small pet reduction required for small Falling Cr pet load, so no composters added.

Mr. Lott explained the cost per units in Table 5. Mr. French asked what the $3750 for Pet Ed. Included. If a pet Ed. Program was done for each impaired watershed, does that mean they cost about $40000 each? DEQ will ask MapTech. (Craig getting Answer from MT)

Mr. Perry said that costs mean nothing to him unless he knows what he's getting for the cost. So why should Henrico spend dollars on BMPs.

Mr. Callahan provided updated cost information for 3 items in Table 5, which Mr. Lott recorded. (include here)

Mr. Mawyer stated his opinion that credit buying programs are a sham that will not improve the situation in future years.

Ms. LeRose provided a document on bacterial reduction for pet education and will email it to Mr. Lott. (Craig reminding Grace to get link)

Mr. Lott stated several of group will be needed in the Steering Committee. Ms. Smigo stated the size of the Steering Committee may be limited by certain number per locality so that all localities may be members. Ms. Smigo said that SC responsibilities include reviewing documents and commenting outside of meetings. There is more outside meeting works necessary to be on the steering committee. There are usually 2 SC meetings, but may need a third.

Ms. Smigo stated there is a strict timeline for completing the IP due to stimulus funding source. A draft IP must be available by July 30, so it must go out to public comment in mid to late May.

Mr. Mills asked how do we reconcile the different efficiency data that may be used by two different groups? Mr. Perry stated that if asked what Henrico Co. will do for BMPs he will say we do not know because we do not know the efficiencies. Mr. Mills added that developers and home buyers will also dispute BMPs needed because of cost.

Mr. Fritz stated that stormwater permits must be consistent with TMDL WLAs. The IP is meant for NPS, the WLAs are for PS. Additionally, this analysis being provided by the federal funding, will enable localities toEventually effluent limits will be in stormwater permits (WQBELs), in the meantime looking at PBM implementation where there is now flexibility what can be done there.

Mr. Lott stated that most IPs are developed to address problems throughout the watershed. If you meet use attainment in one segment, then we may begin to focus another area, but typically address watershed wide reductions in phases throughout the watershed. If the WLAs are demonstrated early as being met, the determination from that is usually that the BMPs are where they should be and engineered correctly. Mr. Fritz said that because of land use changes, planning for BMP implementation is not always that simple and it may not work out that way.

The next Govt/urban workgroup meeting will be January 26 at 10am at the Henrico County Administrative Annex Building.

Action Items:

1. Mark Alling will provide Bernards Creek data and insert Bernards Creek Rt. 711 station into 2011-12 sample rotation if necessary.
2. Mark Alling will retrieve all data for all stations used in the James City of Richmond TMDL and distribute to group by email.
3. Henrico will supply GIS contact so that MapTech can request needed data. Doug…
4. Grace…
5. Craig…
6.